

Rohde & Schwarz introduces high-end analog RF and microwave signal generator with industry-leading phase noise performance and highest output power

The R&S SMA100B with a frequency range up to 20 GHz is the most powerful analog signal generator on the market. It delivers signals with the lowest possible phase noise and the highest output power with extremely low harmonics. Engineers no longer need to compromise between output power and a spurious free dynamic range. The R&S SMA100B is designed for the RF semiconductor, wireless communications and aerospace and defense industries.

Munich, June 1, 2017 — The R&S SMA100B provides purest signals with the lowest possible phase noise at all offset frequencies (1 GHz, -152 dBc/Hz, 20 kHz offset). A 6 GHz instrument generates up to 38 dBm RF output power, and a 20 GHz instrument generates up to 32 dBm in the microwave frequency range. Harmonics are extremely low across the entire frequency range; above 6 GHz they are even significantly lower than 70 dBc at 18 dBm output power. Nonharmonics are below 110 dBc at an output signal of 1 GHz.

"The R&S SMA100B enables our customers to verify the true performance of their DUTs without the signal source affecting the results," says Andreas Pauly, Vice President Signal Generators, Audio Analyzers and Power Meters at Rohde & Schwarz. "The R&S SMA100B offers unprecedented performance, giving our customers a technological lead in bringing products to the market."

Extremely pure signals for high-precision ADC and DAC testing

State-of-the-art ADCs and DACs require absolutely pure signals with the lowest phase and wideband noise possible. In addition to delivering extremely pure analog RF signals, the R&S SMA100B is the world's only analog signal generator that can simultaneously provide a second, independently configurable, extremely pure and synchronized clock signal up to a frequency of 6 GHz. As a result, users can characterize ADCs with a single analog signal generator. The extremely low wideband phase noise of the clock synthesizer output signal (100 MHz, -175 dBc/Hz, 30 MHz offset) makes it possible to measure the true signal-to-noise ratio of modern ADCs. In conjunction with the excellent wideband noise of the RF

signal, this makes the new R&S SMA100B the perfect reference for characterizing high-quality ADCs.

"Rohde & Schwarz's introduction of its low phase noise R&S SMA100A signal generator – the predecessor of the R&S SMA100B – nearly a decade ago has helped us evaluate, test and specify our world-class A/D converters to their maximum capabilities," said Ron Goga, Test Director of High Speed A/D Converters, Analog Devices, Inc. "The close cooperation between our two companies and the timely release of the R&S SMA100B with extremely pure analog RF signals up to 20 GHz coincides with the release of Analog Devices' new RF series of converters, which includes the new AD9208 dual 3GSPS 14b A/D converter and AD9172 dual 12GSPS 16b D/A converter. The state-of-the-art performance of the R&S SMA100B allows us to continue to showcase our RF data converters in the best possible light."

The R&S SMA100B is also the perfect choice for a clock source when characterizing DACs. The generator's extremely low phase noise produces minimal signal jitter that does not influence the measurement results for the DACs.

The best radar signals for the most demanding applications

The R&S SMA100B has a powerful pulse modulator and generates pulses with extremely short rise and fall times and an on/off ratio below 90 dB. State-of-the-art digital, high-precision automatic level control (ALC) ensures that the absolute top power levels of narrow pulses are output in a highly accurate, reproducible manner. Closed loop level control is available for pulse widths starting at 100 ns. These characteristics make it possible to test advanced radar receivers with unmatched accuracy under demanding pulse scenario conditions.

Extremely pure local oscillator signals are often required to verify system performance before the overall integration of a radar system can take place. The R&S SMA100B is the ideal solution, as it can provide high-level signals with extremely low, close-in phase noise (10 GHz, –83 dBc/Hz, 10 Hz offset).

High-quality, state-of-the-art base stations thanks to conclusive blocking tests

A base station receiver's selectivity is evaluated by several criteria, including how well it suppresses strong interferers. When simulating in-band or out-of-band interferers with the

R&S SMA100B, the instrument's ultra low phase noise option of the instrument ensures that phase noise and wideband noise from the simulated interferer have a minimal impact on the wanted signal. It is through the excellent signal quality of the R&S SMA100B that a base station's true interference suppression performance can be demonstrated (e.g. wideband noise at 10 GHz is below -160 dBc/Hz at 30 MHz offset).

Wear-free, electronic step attenuators and the highest output powers for production environments

The ultra high output power option enables the R&S SMA100B to provide up to 38 dBm of output power, eliminating the need for external amplifiers in automated test environments. With its integrated, wear-free electronic step attenuators now standard also in the 20 GHz instruments, Rohde & Schwarz is maximizing the operational life of test systems even with millions of level switching cycles, while ensuring zero wear on the instrument. This solution also offers extremely fast level setting times for the first time ever in a microwave signal generator.

Plug & play with R&S Legacy Pro

The R&S SMA100B is included in the R&S Legacy Pro program and can easily replace obsolete signal generators from Rohde & Schwarz and other manufacturers in automated test environments without the need to modify test software.

The R&S SMA100B RF and microwave signal generator is now available from Rohde & Schwarz. For further information, go to:

www.rohde-schwarz.com/ad/press/purest-signal.

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Rohde & Schwarz

The Rohde & Schwarz electronics group offers innovative solutions in all fields of wireless communications as well as in IT security. Founded more than 80 years ago, the independent company has an extensive sales and service network with subsidiaries and representatives in more than 70 countries. On June 30, 2016, Rohde & Schwarz had approximately 10,000 employees. The group achieved a net revenue of approximately EUR 1.92 billion in the 2015/2016 fiscal year (July to June). The company is headquartered in Munich, Germany, and also has strong regional hubs in Asia and the USA.

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